AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-49 (cancelled)

50. (new) A DNA molecule comprising a heterologous gene encoding a protein, a selection gene, a target region for a site-specific recombinase, and a conditional origin of replication whose functionality in a prokaryotic host cell requires a replication initiating protein specific for said origin of replication and foreign to the prokaryotic host cell, wherein said DNA molecule does not encode the replication initiating protein.

51. (new) The DNA molecule according to claim 50, wherein the target region for the site-specific recombinase is the target region for a transposon resolvase, a bacteriophage integrase, or a plasmid resolvase.

52. (new) The DNA molecule according to claim 51, wherein the target region for the site-specific recombinase is that of a Tn3 resolvase, Tn21 resolvase, Tn522 resolvase, or a bacteriophage mu invertase.

53. (new) The DNA molecule according to claim 51, wherein the plasmid resolvase is encoded by the par fragment of RP4.

54. (new) The DNA molecule according to claim 51, wherein the target region for the site-specific recombinase is that of a bacteriophage integrase selected from the group consisting of lambda integrase, phi80 integrase, P22 integrase, HP1 integrase, integrase *Cre* of P1, the integrase of plasmid pSAM2, the FLP recombinase of plasmid 2µ, recombinase *XerC* of *E. coli,* and recombinase *XerD* of *E. coli.*

55. (new) The DNA molecule according to claim 50, wherein said target region comprises a *cer* fragment from ColE1 or a smaller fragment having the same properties.

56. (new) The DNA molecule according to claim 50, wherein the selection gene is not an antibiotic resistance gene.

57. (new) The DNA molecule according to claim 50, wherein the conditional origin of replication is a plasmid or bacteriophage conditional origin of replication.

58. (new) The DNA molecule according to claim 57, wherein the plasmid or bacteriophage is RK2, R6K, R1, pSC101, Rtsl, F, RSF1010, P1, P4, lambda, Phi82, or Phi80.

59. (new) The DNA molecule according to claim 58, wherein the plasmid is R6K.

60. (new) The DNA molecule according to claim 59, wherein the conditional origin of replication comprises the gamma origin of replication of plasmid R6K.

61. (new) The DNA molecule according to claim 60, wherein the conditional origin of replication comprises SEQ ID No: 1.

62. (new) The DNA molecule according to claim 50, wherein the selection gene encodes a suppressor transfer RNA for a specific codon.

63. (new) The DNA molecule according to claim 62, wherein the suppressor is a suppressor transfer tRNA for an amber codon.

64. (new) The DNA molecule according to claim 50, wherein the heterologous gene encodes a protein of therapeutic, vaccinal, agronomic, pharmaceutical, or veterinary interest.

65. (new) The DNA molecule according to claim 64, wherein the heterologous gene encodes an enzyme, a blood derivative, a hormone, a lymphokine, an interferon, tumor necrosis factor, a growth factor, a neurotransmitter or precursor thereof, a trophic factor, an apolipoprotein, dystrophin, minidystrophin, a tumor suppressor gene, a factor involved in the coagulation cascade, is a suicide gene, encodes all or part of natural or artificial immunoglobulin, a sense or antisense sequence, or an antigenic peptide.

66. (new) The DNA molecule according to claim 65, wherein the lymphokine is an interleukine.

67. (new) The DNA molecule according to claim 65, wherein the trophic factor is BDNF, CNTF, NGF, IGF, GMF, aFGF, bFGF, NT3, or NT5.

68. (new) The DNA molecule according to claim 65, wherein the apolipoprotein is ApoAI, ApoAIV, or ApoE.

69. (new) The DNA molecule according to claim 65, wherein the tumor suppressor gene is p53, Rb, RaplA, DCC, or k-rev.

70. (new) The DNA molecule according to claim 65, wherein the factor involved in the coagulation cascade is Factor VII, Factor VIII, or Factor IX.

71. (new) The DNA molecule according to claim 65, wherein the suicide gene is thymidine kinase or cytosine deaminase.

72. (new) The DNA molecule according to claim 65, wherein the part of natural or artificial immunoglobulin is an Fab fragment or a ScFv fragment.

73. (new) The DNA molecule according to claim 65, wherein the antigenic peptides is specific for Epstein Barr virus, HIV, hepatitis B virus, or is tumor specific.

74. (new) The DNA molecule according to claim 50, wherein the heterologous gene is under the control of a bacteriophage T7 promoter, CMV promoter, Plac, Ptrp, Ptrc, Ptac, PL, or PR promoters.

75. (new) The DNA molecule according to claim 74, wherein the heterologous gene is under the control of a CMV promoter.

76. (new) A pharmaceutical composition comprising at least one DNA molecule according to claim 50.

77. (new) A plasmid comprising a heterologous *pir* gene comprising at least one mutation.

78. (new) The plasmid of claim 77, wherein the at least one mutation is in the *pir* gene copy number control region, the *pir* gene leucine zipper-like motif, or the *pir* gene DNA binding region.

79. (new) The plasmid of claim 77, wherein the heterologous *pir* gene comprises mutations in the copy number control region and the leucine zipper-like motif.

80. (new) The plasmid of claim 79, further comprising a mutation in the *pir* gene DNA binding region.

81. (new) The plasmid of claim 77, wherein the heterologous *pir* gene comprises mutations in the copy number control region and the DNA binding region.

82. (new) The plasmid of claim 77, wherein the heterologous *pir* gene comprises mutations in the DNA binding region and the leucine zipper-like motif.

83. (new) The plasmid of claim 81, wherein the mutation in the DNA binding region is the 114C mutation.

84. (new) The plasmid of claim 81, wherein the mutation in the DNA binding region is the 100B mutation.

85. (new) The plasmid of claim 81, wherein the mutation in the DNA binding region is the 201C mutation.

86. (new) A prokaryotic recombinant host cell comprising (1) a heterologous replication initiation protein that activates a conditional origin of replication, and (2) a DNA molecule comprising a heterologous gene encoding a protein, a selection gene, a target region for a site-specific recombinase, and a conditional origin of replication whose functionality in a prokaryotic host cell requires a replication initiating protein specific for said origin of replication and foreign to the prokaryotic host cell, wherein said DNA molecule does not encode the replication initiating protein.

87. (new) The prokaryotic recombinant host cell according to claim 86, wherein the conditional origin of replication is from a bacterial plasmid or a bacteriophage.

88. (new) The prokaryotic recombinant host cell according to claim 87, wherein the conditional origin of replication is from R2K, R6K, R1, pSC101, Rtsl, F, RSF1010, P1, P4, lambda, Phi82 or Phi80.

89. (new) The prokaryotic recombinant host cell according to claim 88, wherein the conditional origin of replication is from bacterial plasmid R6K.

90. (new) The prokaryotic recombinant host cell according to claim 89, wherein the host cell further comprises a gene comprising an amber mutation.

91. (new) The prokaryotic recombinant host cell according to claim 86, wherein said heterologous replication initiation protein is the pi initiator protein.

92. (new) The prokaryotic recombinant host cell according to claim 86, wherein said heterologous replication initiation protein is encoded by gene *pir*.

93. (new) The prokaryotic recombinant host cell according to claim 86, wherein said heterologous replication initiation protein is encoded by gene *pir*116.

94. (new) The prokaryotic recombinant host cell according to claim 91, wherein said host cell is deficient for the gene *endA*.

95. (new) The prokaryotic recombinant host cell according to claim 94, wherein said host cell is deficient for the gene *traD*.

96. (new) The prokaryotic recombinant host cell according to claim 95, wherein said host cell is TEX1.

97. (new) The prokaryotic recombinant host cell according to claim 96, wherein said host cell further comprises a mutated *recA* gene.

98. (new) The prokaryotic recombinant host cell according to claim 97, wherein said heterologous replication initiation protein is encoded by *pir*116 *pir*42.

99. (new) The prokaryotic recombinant host cell according to claim 98, wherein the replication initiation protein is encoded by the sequence set forth in SEQ ID NO: 21.

100. (new) The prokaryotic recombinant host cell according to claim 98, wherein said host cell is TEX2*pir*42.

101. (new) The prokaryotic recombinant host cell according to claim 91, wherein said host cell is XAC1*pir*116.

102. (new) The prokaryotic recombinant host cell according to claim 98, wherein said host cell is TEX2.

103. (new) A prokaryotic recombinant host cell comprising a heterologous *pir* gene encoding a π protein and a DNA molecule comprising a heterologous gene encoding a protein, a selection gene, a target region for a site-specific recombinase, and a conditional origin of replication whose functionality in a prokaryotic host cell requires a π protein.

104. (new) The prokaryotic recombinant host cell of claim 103, wherein the heterologous *pir* gene comprises at least one mutation.

105. (new) The prokaryotic recombinant host cell of claim 104, wherein the at least one mutation is in the *pir* gene copy number control region, the *pir* gene leucine zipper-like motif, or the *pir* gene DNA binding region.

106. (new) The prokaryotic recombinant host cell of claim 104, wherein the heterologous *pir* gene comprises mutations in the copy number control region and the leucine zipper-like motif.

107. (new) The prokaryotic recombinant host cell of claim 106, further comprising a mutation in the *pir* gene DNA binding region.

108. (new) The prokaryotic recombinant host cell of claim 104, wherein the heterologous *pir* gene comprises mutations in the copy number control region and the DNA binding region.

109. (new) The prokaryotic recombinant host cell of claim 104, wherein the heterologous *pir* gene comprises mutations in the DNA binding region and the leucine zipper-like motif.

110. (new) The prokaryotic recombinant host cell of claim 103, wherein the heterologous *pir* gene is in a plasmid.

111. (new) The prokaryotic recombinant host cell of claim 103, wherein the heterologous *pir* gene is in the genome of the host cell.

112. (new) The prokaryotic recombinant host cell of claim 108, wherein the mutation in the DNA binding region is the 114C mutation.

113. (new) The prokaryotic recombinant host cell of claim 108, wherein the mutation in the DNA binding region is the 100B mutation.

114. (new) The prokaryotic recombinant host cell of claim 108, wherein the mutation in the DNA binding region is the 201C mutation.

115. (new) A method for producing a plasmid comprising a heterologous gene and a conditional origin of replication whose functionality in a prokaryotic host cell requires a replication initiating protein foreign to the host cell, comprising:

a) culturing TEX2*pir42* comprising the plasmid to be produced; and

b) isolating the plasmid.

116. (new) The method according to claim 115, wherein the origin of replication comprises SEQ ID NO: 1.

117. (new) The method according to claim 116, wherein the plasmid further comprises a selection gene that does not impart resistance to an antibiotic.

118. (new) The method according to claim 117, wherein the selection gene encodes a suppressor transfer RNA for specific codons.

119. (new) The method according to claim 118, wherein the selection gene is a suppressor of an amber transfer RNA, and the host cell further comprises a gene comprising an amber mutation.

120. (new) A method for producing a plasmid comprising a heterologous gene and a conditional origin of replication whose functionality in a prokaryotic host cell requires a replication initiating protein foreign to the host cell, comprising:

(a) culturing the prokaryotic recombinant host cell of claim 86 under conditions wherein the plasmid is produced; and

(b) isolating the plasmid.

121. (new) The method according to claim 120, wherein the plasmid further comprises a selection gene that does not impart resistance to an antibiotic.

122. (new) The method according to claim 121, wherein the selection gene encodes a suppressor transfer RNA for specific codons.

123. (new) The method according to claim 122, wherein the selection gene is a suppressor of an amber transfer RNA, and the host cell further comprises a gene comprising an amber mutation.

124. (new) A method for detecting a plasmid copy-up mutation comprising:

(a) introducing at least one mutation into a target sequence;

(b) transforming the mutated target sequence into a host cell comprising a plasmid, wherein the plasmid comprises a nucleotide sequence encoding uroIII methyltransferase and the copy number of the plasmid is effected by the target sequence;

(c) growing the host cell under conditions wherein the nucleotide sequence is expressed to produce a culture of host cells;

(d) exposing the culture of host cells to UV light; and

(e) detecting fluorescence produced by the culture of host cells.

125. (new) The method of claim 124, wherein the nucleotide sequence is the *cobA* gene from *Pseudomonas denitrificans*.

126. (new) The method of claim 124, further comprising comparing the fluorescence detected in (e) with fluorescence produced by a culture of host cells comprising an non-mutated target sequence.

127. (new) A method of treating or preventing a genetic disease, a neurodegenerative disease, cancer, a pathology associated with coagulation disorders or with dyslipoproteinaemias, or pathologies associated with viral infections, comprising administering to a patient in need thereof the DNA molecule according to claim 50.

128. (new) The method of claim 127, wherein the genetic disease is dystrophy or cystic fibrosis.

129. (new) The method of claim 127, wherein the neurodegenerative disease is Alzheimer's disease, Parkinson's disease, or ALS.

130. (new) The method of claim 127, wherein the viral infection is hepatitis or AIDS.

131. (new) A method of producing recombinant protein comprising transforming a host cell with the DNA molecule according to claim 50, culturing the host cell, and recovering the protein.

132. (new) A method of stimulating an immune response, comprising administering to a mammal a DNA molecule comprising a heterologous gene encoding an antigenic peptide, a selection gene, a target region for a site-specific recombinase, and a conditional origin of replication whose functionality in a prokaryotic host cell requires a replication initiating protein specific for said origin of replication and foreign to

the prokaryotic host cell, wherein said DNA molecule does not encode the replication initiating protein.